

March 8, 2019

Rebecca T. Asami
Central Valley Regional Water Quality Control Board
1685 E Street
Fresno, CA 93706

via email: CentralValleyFresno@waterboards.ca.gov
cc: Rebecca.asami@waterboards.ca.gov

**Re: Comments regarding the tentative Order for Produced Wastewater
Reclamation Projects in Kern and Tulare Counties**

Dear Ms. Asami:

Clean Water Action (CWA), the Environmental Defense Fund (EDF), and the Environmental Working Group (EWG) appreciate the opportunity to provide brief comments on the referenced Tentative Order.

CWA, EDF, and EWG support the Tentative Order and commend the Board for taking these additional steps to ensure that those who are assessing the safety of produced water use in agriculture in the Central Valley have the data and information they need.

Ongoing data collection, particularly where practices are variable and evolving such as in this instance, are necessary to keep decision-makers informed and quickly identify and respond to any emerging issues or concerns. This is particularly important where the health of consumers is concerned. It is unclear, however, from the Tentative Order whether annual information reports will be required throughout the life of the project or only while the Food Safety Project is active. The February 7, 2019 notice and the Tentative Order seem to conflict on this point. CWA, EDF, and EWG would strongly encourage the Board to maintain annual reporting beyond the conclusion of the Food Safety study and clarify this in the Final Order.

It is also unclear whether the new explicit requirement for access to obtain crop samples is accompanied by access to obtain soil samples. We would therefore recommend that the Order clarify that access for sampling applies to both soil and crop samples.

There is a lot left to learn about produced water and the health and environmental considerations surrounding its reuse in the irrigation of food crops, and our groups therefore support the Board's effort to learn more. However, while we commend the effort to analyze health impacts, the investigation is clearly ongoing, and we would like to caution the Board against making broad, premature statements of safety such as "this practice has not been shown to be a threat to public health" until a thorough and adequate assessment is completed (see Tentative Order clauses 2 and 6). We recognize this Tentative Order as a positive effort on the part of the Board to be thorough in its review, but also recommend that the Board work to be as transparent as possible with respect to the ongoing assessment and potential limitations of this effort.

Assessing and understanding the risks associated with the reuse of produced water in any circumstance is challenging. Even where disclosures are thorough, as in California, analyses are realistically limited by uncertainty regarding the full suite of potential constituents of concern,¹ the availability of appropriate analytical methods,² and existence of substantive toxicological data necessary to thoroughly characterize risk and define or enforce limits.³ This creates obstacles not only in assessing the health-related impacts of worker safety for those harvesting and handling the crop or the consumption of a fruiting body of plants irrigated by treated and/or blended produced water, but also in more holistically understanding potential ecosystem impacts including short-term and long-term soil and crop health.

In any case, targeted gathering of useful data is necessary and important, and this Order is a constructive step on the part of the Board. Requiring, rather than simply encouraging, Dischargers to continue to submit data, ensure access to samples, and participate in ongoing studies will help to ensure that decisions are thorough, informed, and protective of people and the environment.

In conclusion, CWA, EDF, and EWG respectfully requests that this Tentative Order be finalized with clarification that the annual submission on information regarding irrigated crops extends beyond the tenure of the ongoing Food Safety study and that access for sampling applies to both crop and soil samples. Detailed ongoing data assessment in perpetuity of these permitted practices is crucial in order to understand whether any changing circumstances or practices may impact conclusions eventually drawn by the panel.

Respectfully submitted –

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Attorney
Environmental Defense Fund

Bill Allayaud
California Director of Government Affairs
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¹ See, e.g., Nell, M. & Helbling, D. E. Exploring matrix effects and quantifying organic additives in hydraulic fracturing associated fluids using liquid chromatography electrospray ionization mass spectrometry. *Environmental Science: Processes & Impacts* (2018). doi:10.1039/C8EM00135A

² See, e.g., Oetjen, K. et al. Emerging analytical methods for the characterization and quantification of organic contaminants in flowback and produced water. *Trends in Environmental Analytical Chemistry* 15, 12–23 (2017). doi: [10.1016/j.teac.2017.07.002](https://doi.org/10.1016/j.teac.2017.07.002); Tasker, T. L. et al. Accuracy of methods for reporting inorganic element concentrations and radioactivity in oil and gas wastewaters from the Appalachian Basin, U.S. based on an inter-laboratory comparison. *Environmental Science: Processes & Impacts* (2019). doi:10.1039/C8EM00359A.

³ See, e.g., Yost, E. E., Stanek, J., DeWoskin, R. S. & Burgoon, L. D. Estimating the Potential Toxicity of Chemicals Associated with Hydraulic Fracturing Operations Using Quantitative Structure–Activity Relationship Modeling. *Environmental Science & Technology* 50, 7732–7742 (2016).